

MARKETAXESS HOLDINGS INC  
Form 10-K  
February 20, 2019

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934  
For the fiscal year ended December 31, 2018

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF  
1934

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission File Number 001-34091

MARKETAXESS HOLDINGS INC.

(Exact name of registrant as specified in its charter)

Delaware  
(State of incorporation)

52-2230784  
(IRS Employer

Identification No.)

55 Hudson Yards, New York, New York  
(Address of principal executive offices)

10001  
(Zip Code)

(212) 813-6000

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(Registrant's telephone number, including area code)

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

Title of each class:	Name of each exchange on which registered:
Common Stock, par value \$0.003 per share	NASDAQ Global Select Market

SECURITIES REGISTERED PURSUANT TO SECTION 12(g) OF THE ACT:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See definition of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	Accelerated filer
Non-accelerated filer	Smaller reporting company
	Emerging growth company

If an emerging growth company, indication by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

The aggregate market value of the shares of common stock held by non-affiliates of the registrant as of June 30, 2018 (the last business day of the registrant's most recently completed second fiscal quarter) was approximately \$7.2 billion

computed by reference to the last reported sale price on the NASDAQ Global Select Market on that date. For purposes of this calculation, affiliates are considered to be officers, directors and holders of 10% or more of the outstanding common stock of the registrant on that date. The registrant had 37,578,970 shares of common stock, 1,012,868 of which were held by affiliates, outstanding on that date.

As of February 15, 2019, the aggregate number of shares of the registrant's common stock outstanding was 40,585,293.

#### DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement for the 2019 Annual Meeting of Stockholders are incorporated by reference into Items 10, 11, 12, 13 and 14 of Part III of this Form 10-K.

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MARKETAXESS HOLDINGS INC.

2018 FORM 10-K ANNUAL REPORT

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## PART I

### Forward-Looking Statements

This report contains certain “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements may be identified by words such as “expects,” “intends,” “anticipates,” “plans,” “believes,” “seeks,” “estimates,” “will,” or words of similar meaning and include, but are not limited to, statements regarding the outlook for our future business and financial performance. Forward-looking statements are based on management’s current expectations and assumptions, which are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict. It is routine for our internal projections and expectations to change as the year or each quarter in the year progresses, and therefore it should be clearly understood that the internal projections and beliefs upon which we base our expectations may change prior to the end of each quarter or the year. Although these expectations may change, we are under no obligation to revise or update any forward-looking statements contained in this report. Actual future events or results may differ, perhaps materially, from those contained in the projections or forward-looking statements. Factors that could cause or contribute to such differences include those discussed below and elsewhere in this report, particularly in Item 1A. “Risk Factors.”

### Item 1. Business.

MarketAxess Holdings Inc. (the “Company” or “MarketAxess”) operates a leading electronic trading platform that enables fixed-income market participants to efficiently trade corporate bonds and other types of fixed-income instruments using our patented trading technology. Over 1,500 institutional investor and broker-dealer firms are active users of our trading platform, accessing global liquidity in U.S. high-grade corporate bonds, emerging markets and high-yield bonds, European bonds, U.S. agency bonds, municipal bonds, leveraged loans, credit default swaps and other fixed-income securities. Through our Open Trading™ protocols, we execute bond trades between and among institutional investor and broker-dealer clients in an all-to-all anonymous trading environment in which MarketAxess acts as the matched principal counterparty. We also offer a number of trading-related products and services, including: Composite+ pricing and other market data products to assist clients with trading decisions; auto-execution and other execution services for clients requiring specialized workflow solutions; connectivity solutions that facilitate straight-through processing; and technology services to optimize trading environments. Through our Trax® division, we also offer a range of pre- and post-trade services, including trade matching, trade publication, regulatory transaction reporting and market and reference data across a range of fixed-income and other products.

Our platform’s innovative technology solutions are designed to increase the number of potential trading counterparties on our electronic trading platform and create a menu of solutions to address different trade sizes and bond liquidity characteristics. Our traditional Request-For-Quote (“RFQ”) model allows our institutional investor clients to simultaneously request competing, executable bids or offers from our broker-dealer clients and execute trades with the broker-dealer of their choice from among those that choose to respond. Our Open Trading protocols complement our RFQ model by increasing the number of potential counterparties and improving liquidity by allowing all participants to interact anonymously in an all-to-all trading environment. Clients can use our auto-execution technology with both our traditional RFQ and Open Trading protocols, thereby using rules-based execution to connect to diverse sources of liquidity while reducing trading inefficiencies and human errors. Our platform also provides our broker-dealer clients a solution that enables them to efficiently reach our institutional investor clients for the distribution and trading of

bonds.

Traditionally, bond trading has been a manual process, with product and price discovery conducted over the telephone between two or more parties. This traditional process has a number of shortcomings resulting primarily from the lack of a central trading facility for fixed-income securities, which makes it difficult to match buyers and sellers for particular issues. Many market participants also use e-mail and other electronic means of communication for trading these securities. While these electronic communication methods have addressed some of the limitations associated with traditional bond trading methods, we believe that the process is still hindered by limited liquidity, limited price transparency, significant transaction costs, compliance and regulatory challenges, and difficulty in executing numerous trades at one time. Our platform's functionality addresses many of the remaining shortcomings that result from trading bonds over the telephone or via e-mail.

Our services relating to trade execution range from providing a suite of trading protocols designed to fit the trading needs of our clients to innovative new trading technologies, such as auto-execution and the use of artificial intelligence, to assist our clients' trading decisions. Trading protocols include single and multiple-dealer inquiries; list trading, which is the ability to request bids and offers on multiple bonds at the same time; and swap trading, which is the ability to request an offer to purchase one bond and a bid to sell another bond, in a manner such that the two trades will be executed simultaneously, with payment based on the price differential of the bonds. Auto-execution allows clients to set eligibility criteria for their orders and our system will determine whether or not to execute a trade in accordance with the pre-defined parameters. Once a trade is completed on our platform, the broker-dealer client and institutional investor client may settle the trade with the assistance of our automated post-trade messaging, which facilitates the communication of trade acknowledgment and allocation information between our institutional investor and broker-dealer clients.

We are not a party to any of the disclosed trades that occur on our platform between institutional investor clients and broker-dealer clients; rather, we serve as an intermediary between broker-dealers and institutional investors, enabling them to meet, agree on a price and then transact directly with each other. However, in connection with our Open Trading protocols, we execute bond transactions between and among institutional investor and broker-dealer clients on a matched principal basis by serving as counterparty to both the buyer and the seller in matching back-to-back trades which are then settled through a third-party clearing broker. In 2018, 22.0% of all MarketAxess platform volume was executed via Open Trading protocols, up from 15.9% in 2017.

In recent years, corporate bond debt owned by institutional investors has increased, while the available base of capital for dealer market making has declined. Partly as a result of these trends, overall secondary turnover as a percentage of corporate debt outstanding has been falling, causing all market participants to look for new electronic trading solutions to improve liquidity and turnover. We have responded with a series of Open Trading protocols designed to allow our broker-dealer and institutional investor clients to interact in an all-to-all trading environment. During 2018, almost 1,000 participating client firms provided liquidity via our Open Trading solutions and we completed approximately 1.1 million Open Trading trades, an increase of 73.2% compared to 2017.

Our broker-dealer clients accounted for approximately 97.7% of the underwriting of newly-issued U.S. corporate bonds and approximately 83.6% of the underwriting of newly issued European corporate bonds in 2018. Although institutional investors, specialist market-making firms, proprietary trading firms and other non-traditional liquidity providers have increasingly provided liquidity on our platform through Open Trading<sup>TM</sup>, we believe these broker-dealers still represent the principal source of secondary market liquidity in the markets in which we operate. Secondary market liquidity refers to the ability of market participants to buy or sell a security quickly and in large volume subsequent to the original issuance of the security, without substantially affecting the price of the security. In addition to trading fixed-income securities by traditional means, including the telephone and e-mail, our broker-dealer clients use proprietary single-dealer systems and other trading platforms, as well as our electronic trading platform.

In 2018, our volume in U.S. high-grade corporate bonds represented approximately 18.1% of the total estimated U.S. high-grade corporate bond volume, as reported by the Financial Industry Regulatory Authority (“FINRA”) Trade Reporting and Compliance Engine (“TRACE”). TRACE facilitates the mandatory reporting of over-the-counter (“OTC”) secondary market transactions in eligible fixed-income securities in the U.S., including trading between institutional investors and broker-dealers, as well as inter-dealer and retail trading. All broker-dealers that are FINRA member firms have an obligation to report transactions in corporate bonds to TRACE under a set of rules approved by the Securities and Exchange Commission (“SEC”).

Through our Trax<sup>®</sup> brand, we provide trade matching and regulatory reporting services for European investment firms and market and reference data across a range of fixed-income products. In response to the pre-and post-trade transparency mandates from the recast Markets in Financial Instruments Directive (“MiFID II”) in Europe, Trax<sup>®</sup> has been authorized by the UK Financial Conduct Authority (“FCA”) as an Approved Publication Arrangement (“APA”) and an Approved Reporting Mechanism (“ARM”). In addition to its APA and ARM reporting services, Trax<sup>®</sup> has developed a comprehensive suite of value-add solutions for MiFID II, including pre-trade transparency services, systematic internaliser (“SI”) determination and monitoring, best execution reporting, commodity position reporting, data quality analysis and peer benchmarking.

In 2018, 89.7% of our revenues were derived from commissions for trades executed on our platform and distribution fees that are billed to our broker-dealer clients on a monthly basis. We also derive revenues from information services, post-trade services and other income. Our expenses consist of employee compensation and benefits, depreciation and amortization, technology and communication expenses, professional and consulting fees, occupancy, marketing and advertising, clearing costs and other general and administrative expenses.

## Industry Background

Fixed-income securities are issued by corporations, governments and other entities, and pay a pre-set absolute or relative rate of return. As of September 30, 2018, the most recent date available, there were approximately \$42.4 trillion principal amount of fixed-income securities outstanding in the U.S. market, including \$9.2 trillion principal amount of U.S. corporate bonds, according to SIFMA. The estimated average daily trading volume of U.S. corporate bonds, as measured by TRACE, was \$28.6 billion in 2018. Primary dealer holdings of U.S. corporate bonds (investment-grade and high-yield) as reported by the Federal Reserve Bank of New York were \$5.4 billion as of December 31, 2018. This represents less than one day of trading volume as measured by TRACE.



Prior to regulatory reforms, such as Basel III and regulations under The Dodd–Frank Wall Street Reform and Consumer Protection Act (the “Dodd-Frank Act”), dealer balance sheets were relatively elastic, so dealers were able to facilitate trading in most fixed-income products without dramatic price moves. The regulatory reforms enacted after the global financial crisis resulted in greater capital and liquidity requirements for dealers, which impacted market liquidity and diminished risk appetite by market intermediaries. The Volcker Rule, which limits proprietary trading by banks, has also had an impact on dealer inventories and the ability of dealers to act as market-makers. As a result, we believe market participants require different solutions to increase liquidity and we have responded with our Open Trading protocols, designed to increase the number of potential trading counterparties on our electronic trading platform by allowing our broker-dealer and institutional investor clients to interact in an all-to-all trading environment.

#### Markets for Securities Traded on our Platform

The U.S. corporate bond market consists of three broad categories of securities: investment-grade debt (so-called “high-grade”), which typically refers to debt rated BBB- or better by Standard & Poor’s or Baa3 or better by Moody’s Investor Service; debt rated below investment-grade (so-called “high-yield”), which typically refers to debt rated lower than BBB- by Standard & Poor’s or Baa3 by Moody’s Investor Service; and debt convertible into equity (so-called “convertible debt”). We use the terms high-grade debt and investment-grade debt interchangeably in this Annual Report on Form 10-K.

#### U.S. High-Grade Corporate Bond Market

The U.S. high-grade corporate bond market represents the largest subset of the U.S. corporate bond market. FINRA includes over 65,000 unique securities in the list of TRACE-eligible bonds, representing the majority of the daily trading volume of high-grade bonds. According to SIFMA, U.S. high-grade corporate bond debt outstanding has increased approximately 19.6% from \$7.7 trillion at year-end 2013 to \$9.2 trillion at September 30, 2018. Over the last five years, high-grade corporate bond issuance was over \$1 trillion each year, exceeding pre-financial crisis levels. Notwithstanding the growth in the total amount of debt outstanding, turnover (which is the total amount traded as a percentage of the amount outstanding for the bonds that traded) is below pre-credit crisis levels. The trading volume of U.S. high-grade corporate bonds as reported by TRACE increased to approximately \$5.1 trillion for the year ended December 31, 2018, compared to \$4.9 trillion and \$4.6 trillion for the years ended December 31, 2017 and 2016, respectively. We believe that the low level of turnover is an indicator of liquidity challenges in the credit markets.

#### U.S. Crossover and High-Yield Bond Market

We define the high-yield bond market generally to include all debt rated lower than BBB- by Standard & Poor’s or Baa3 by Moody’s Investor Service. We define the crossover market to include any debt issue rated below investment-grade by one agency but investment-grade by the other. The total annual amount of high-yield corporate bond issuance as reported by SIFMA decreased by 39.1% to \$173.0 billion in 2018 from \$284.9 billion in 2017. The average daily trading volume of high-yield bonds as measured by TRACE for the year ended December 31, 2018 was approximately \$8.0 billion compared to \$8.2 billion and \$8.5 billion for the years ended December 31, 2017 and 2016, respectively.

#### Emerging Markets Bond Market

We define the emerging markets bond market generally to include U.S. dollar, Euro or local currency denominated bonds issued by sovereign entities or corporations domiciled in a developing country. These issuers are typically located in Latin America, Asia, or Central and Eastern Europe. Examples of countries we classify as emerging markets include: Argentina, Brazil, Colombia, Mexico, Peru, the Philippines, Russia, Turkey and Venezuela.

The institutional investor base for emerging markets bonds includes many crossover investors from the high-yield and high-grade investment areas. Institutional investors have been drawn to emerging markets bonds by their high returns and high growth potential. The average daily trading volume of emerging markets debt, as reported by the Emerging Markets Trade Association for the nine months ended September 30, 2018, the most recent date available, was \$20.3 billion compared to \$19.9 billion and \$20.7 billion for the years ended December 31, 2017 and 2016, respectively.

#### European Corporate Bond Market

The European corporate bond market consists of a broad range of products, issuers and currencies. We define the European corporate bond market generally to consist of bonds intended to be distributed to European investors, primarily bonds issued by European corporations, excluding bonds that are issued by corporations domiciled in an emerging markets country and excluding most government bonds that trade in Europe. Examples include:

- bonds issued by European corporations, denominated in any currency;
- bonds generally denominated in Euros, U.S. dollars or British Pounds Sterling intended to be distributed to European investors, excluding bonds that are issued by corporations domiciled in an emerging market;

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bonds issued by supra-national organizations (entities that include a number of central banks or government financial authorities, such as the World Bank), agencies and governments located in Europe, generally denominated in Euros, U.S. dollars or British Pounds Sterling, provided that such currency is not the currency of the country where the bond was issued; and floating-rate notes issued by European corporations.

We believe that the European corporate bond market is impacted by many of the same factors as the U.S. high-grade corporate bond market. The total amount of Euro denominated high-grade and high-yield bonds yearly issuance as reported by International Capital Markets Association decreased by 12.0% to \$393.6 billion in 2018 from \$447.4 billion in 2017. The average daily trading volume of European corporate bonds as estimated by Trax<sup>®</sup> for the year ended December 31, 2018 was approximately \$9.2 billion compared to \$8.7 billion and \$8.2 billion for the years ended December 31, 2017 and 2016, respectively.

#### U.S. Agency Bond Market

We define the U.S. agency bond market to include debt issued by a U.S. government-sponsored enterprise. Some prominent issuers of agency bonds are the Federal National Mortgage Association and Federal Home Loan Mortgage Corporation. The total amount of U.S. agency bonds outstanding was approximately \$1.9 trillion as of September 30, 2018 as reported by SIFMA. The average daily trading volume of U.S. agency bonds (excluding mortgage-backed securities) as measured by TRACE was \$3.6 billion for the year ended December 31, 2018 compared to \$3.8 billion and \$5.1 billion for the years ended December 31, 2017 and 2016, respectively.

#### U.S. Municipal Bond Market

Municipal bonds are debt securities issued by states, cities, counties and other governmental entities in the U.S. to fund day-to-day obligations and to finance a wide variety of public projects, such as highways or water systems. Depending on the type of financing, payments of the principal and interest on a municipal bond may come from general revenues of the municipal issuer, specific tax receipts, revenues generated from a public project, or payments from private entities or from a combination of sources. In addition to being issued for many different purposes, municipal securities are also issued in many different forms, such as fixed rate, zero coupon or variable rate bonds. The interest paid on municipal securities is typically exempt from federal income taxation and may be exempt from state income and other taxes as well. As of December 31, 2018, there were over 1.5 million different municipal bonds outstanding, in the total aggregate principal amount of more than \$3.8 trillion. In 2018, the average daily trading volume of municipal bonds, excluding variable rate demand notes, as measured by the Municipal Securities Rulemaking Board (“MSRB”) was \$6.0 billion for the year ended December 31, 2018 compared to \$5.5 billion and \$7.4 billion for the years ended December 31, 2017 and 2016, respectively.

#### Credit Derivative Market

Credit derivatives are contracts that allow market participants to obtain credit protection or assume credit exposure associated with a broad range of issuers of fixed-income securities and other debt obligations without ownership of the underlying security. Among the most significant requirements of the derivatives section of the Dodd-Frank Act are mandatory clearing of certain derivatives transactions (“swaps”) through regulated central clearing organizations and mandatory trading of those swaps through either regulated exchanges or swap execution facilities (“SEFs”), in each case, subject to certain key exceptions. We operate a swap execution facility pursuant to the U.S. Commodity Futures Trading Commission’s (“CFTC”) rules and we list certain credit derivatives for trading by U.S. persons and other participants on our SEF. The SEC has not yet finalized its rules for security-based SEFs that would govern the execution of single-name credit derivatives.

#### Post-Trade Reporting, Publishing and Matching Services

In Europe, all firms regulated as “investment firms” under MiFID II are required to submit complete and accurate details of qualifying transactions to their national regulator no later than the close of the working day following the date of the transaction. This process is known as transaction reporting. Pursuant to the associated Markets in Financial Instruments Regulation (“MiFIR”), the number of fields and the complexity of the information that must be reported to regulators was significantly enhanced. Firms may either report directly to the regulator or use an entity that is licensed as an ARM. In addition, under MiFIR, all regulated investment firms are required to comply with pre- and post-trade transparency requirements pursuant to which quotes and trades must be made public subject to a system of waivers and deferrals. Firms are required to utilize an APA to comply with the post-trade transparency requirement. Trade matching enables counterparties to agree on the terms of a trade shortly after execution, reducing the risk of trade errors and fails during settlement.

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## Our Competitive Strengths

We believe that we are well positioned to strengthen our market position in electronic trading in our existing products and to extend our presence into new products and services by capitalizing on our competitive strengths, including:

### Significant Trading Volumes with Participation by Leading Broker-Dealers and Institutional Investors

Our electronic trading platform provides access to the liquidity provided through the participation on our platform of over 1,500 active institutional investor and broker-dealer clients, including substantially all of the leading broker-dealers in global fixed-income trading. We believe these broker-dealers represent the principal source of secondary market liquidity for U.S. high-grade corporate bonds, emerging markets and high-yield bonds, European high-grade corporate bonds and the other markets in which we operate. Our broker-dealer clients are motivated to continue to utilize our platform due to the presence on the platform of our large network of institutional investor clients and their ability to use our Open Trading protocols to help manage their risk, source liquidity, and facilitate transactions on behalf of their clients.

As shown in the chart below, our total bond trading volume increased from \$767.0 billion in 2014 to \$1.7 trillion in 2018.

Our adjusted estimated share of U.S. high-grade and high-yield corporate bond volume from 2014 to 2018 is shown in the chart below:

\* We adjusted the reported U.S. high-grade TRACE volumes to eliminate the increased reporting of affiliate back-to-back trades by certain broker-dealers that occurred from April 2014 through October 2015 because we believe that the TRACE volume, as adjusted by us, provide a more accurate comparison to prior period reporting.

#### Execution Benefits to Clients

**Benefits to Both Institutional Investor and Broker-Dealer Clients.** We offer additional benefits over traditional fixed-income trading methods that are shared by both institutional investor and broker-dealer clients, including:

**Transparent Pricing on a Range of Securities.** The price discovery process includes the ability to view indicative prices from our broker-dealer clients' inventory available on our platform, access to real-time pricing information and analytical tools available on our BondTicker® service ( including spread-to-Treasury data, search capabilities and independent third-party credit research) and the ability to request executable bids and offers simultaneously from all of our participating broker-dealer clients during the trade process on any debt security in our database of corporate bonds. Institutional investors and broker-dealer clients can search bonds in inventory based on combinations of issuer, issue, rating, maturity, spread-to-Treasury, size and dealer providing the listing, in a fraction of the time it takes to do so manually. Through our Open Trading protocols, participants may also elect to display live requests for bids or offers anonymously to all other users of our electronic trading platform in order to create broader visibility of their inquiry among market participants and increase the likelihood that the request results in a trade. We believe that broader participation in client inquiries will result in more trade matches and lower transaction costs.

**Expanded Liquidity Pool.** In the post-financial crisis years, liquidity has remained a persistent concern for market participants as regulators raised banks' capital requirements and adopted other measures that prompted many dealers to reduce market-making activities even as the buy side's bond holdings have grown rapidly. In this environment, Open Trading, our fully electronic, all-to-all trading environment, has emerged as one solution to the post-crisis liquidity problem. As a result, the liquidity options for Open Trading participants are broader and more diverse compared to the traditional model of bilateral trading with a limited set of dealer counterparties. The expanded pool of liquidity providers includes investment managers, global dealers, regional dealers and specialist market-making and proprietary trading firms. During 2018, almost 1,000 unique liquidity providers participated in Open Trading. Open Trading improves the ability of both dealers and institutional investors to find natural and opportunistic matches, move orders more efficiently, and achieve significant increases in execution quality and price improvement.

**Greater Trading Accuracy.** Our electronic trading platform includes verification mechanisms at various stages of the execution process which result in greater accuracy in the processing, confirming and clearing of trades between institutional investor and broker-dealer clients, including real-time trade details, STP, account allocations, automated audit trails and trade detail matching. These verification mechanisms are designed to ensure that our institutional investor and broker-dealer clients are sending accurate trade messages by providing multiple opportunities to verify they are trading the correct bond, at the agreed-upon price and size. Our platform assists our institutional investor clients in automating the transmittal of order tickets from the portfolio manager to the trader, and from the trader to back-office personnel. This automation provides more timely execution and a reduction in the likelihood of errors that can result from manual entry of information into different systems.

**Efficient Risk Monitoring and Compliance.** Institutional investors, broker-dealers and their regulators are increasingly focused on ensuring that best execution is achieved for fixed-income trades. Our electronic trading platform offers both institutional investors and broker-dealers an automated audit trail for each stage in the trading cycle. This enables compliance personnel to review information relating to trades more easily and with greater reliability. Trade information, including time, price and spread-to-Treasury, is stored securely and automatically on our electronic trading platform. This data represents a valuable source of information for our clients' compliance personnel. Importantly, we believe the automated audit trail, together with the competitive pricing and transaction cost analysis that is a feature of our electronic trading platform, gives fiduciaries the ability to demonstrate that they have achieved best execution on behalf of their clients.

#### Benefits to Institutional Investor Clients

We believe we provide numerous benefits to our institutional investor clients over traditional fixed-income trading methods, including:

**Competitive Prices.** By enabling institutional investors to simultaneously request bids or offers from our broker-dealer clients, we believe our electronic trading platform creates an environment that motivates our broker-dealer clients to provide competitive prices and gives institutional investors confidence that they are obtaining a competitive price. For typical MarketAxess multi-dealer corporate bond inquiries, the range of competitive spread-to-Treasury responses is approximately 13 basis points (a basis point is 1/100 of 1% in yield). As an example of the potential cost savings to institutional investors, a one basis point savings on a \$1 million face amount trade of a bond with 10 years to maturity translates to aggregate savings of approximately \$720. We believe our Open Trading protocols enhance our institutional investor clients' ability to obtain a competitive price by allowing all of our Open Trading participants to interact in an all-to-all trading environment, thereby increasing the potential sources of liquidity for each participant, as well as the likelihood of receiving a competitive price response.

**Improved Cost Efficiency.** We believe that we provide improved efficiency by reducing the time and labor required to conduct broad product and price discovery. Single-security and multi-security (bid or offer lists) inquiries can be efficiently conducted with multiple broker-dealers. Our auto-execution technology uses rules-based execution logic to reduce trading inefficiencies and human errors while allowing traders to focus on higher-value trades. In addition, our BondTicker<sup>®</sup> service eliminates the need for manually-intensive phone calls or e-mail communications to gather, sort and analyze information concerning historical transaction prices.

**Limited Information Leakage.** Our Open Trading protocols allow our institutional investor clients to maintain their anonymity from trade initiation through to settlement without limiting their number of potential trading counterparties. In addition, our Private Axes<sup>®</sup> protocol allows participants to negotiate bilaterally on an anonymous basis to minimize information leakage when transacting in larger trade sizes.

#### Benefits to Broker-Dealer Clients

We also provide substantial benefits to our broker-dealer clients over traditional fixed-income trading methods, including:

**Greater Sales Efficiency.** We offer our broker-dealer clients broad connectivity with our institutional investor clients. Through this connectivity, our broker-dealer clients are able to efficiently display their indications of interest to buy and sell various securities. We also enable broker-dealers to broaden their distribution by participating in transactions to which they otherwise may not have had access. In addition, the ability to post prices and electronically execute on straightforward trades enables bond sales professionals at broker-dealer firms to focus their efforts on higher value-added trades and more complex transactions.

**More Efficient Inventory Management.** The posting of inventory to, and the ability to respond to inquiries from, a broad pool of institutional investors, creates an increased opportunity for broker-dealers to identify demand for their inventory, particularly in less liquid securities. Broker-dealers are also increasingly turning toward Open Trading as a new source of liquidity as they manage their risk exposure. As a result, we believe they can achieve enhanced bond inventory turnover by using our platform, which may limit credit exposure.



### Growing, Comprehensive International Offering and Client Base

Our platform provides global fixed-income market participants with trading functionality across global hard currency and local currency markets, connecting clients in over 50 countries to local and global dealers. MarketAxess has over 740 client firms located outside the U.S. that access our platform through our regulated venues in Europe, Asia and Latin America. Our Open Trading functionality allows international clients to access cross-border liquidity with minimal ramp-up time or regulatory hurdles.

The MarketAxess emerging markets trading platform also offers the mo